



# Career and Technical Education Skill Certificate Program

## *Response to Legislative Leaders*

Accountability mechanisms currently associated with standards-based reform efforts in the United States revolve around meaningful student performance-based assessment programs, with consequences to educational institutions for student achievement. The No Child Left Behind Act of 2001 and the Carl D. Perkins Career and Technical Education Improvement Act of 2006 further reinforce the priority for policies and programs that sufficiently measure student performance.

The primary purpose of the Career and Technical Education (CTE) Skill Certificate assessment program is to report vocational and technical skill attainment as part of the accountability requirements mandated by the federal government, the Utah State Legislature, and the State Board of Education. It is also designed to improve Career and Technical Education program curriculum and instruction through the use of incentives to school districts based on student performance.

Although it's difficult to quantify a precise financial return on the legislative investment for the CTE Skill Certificate testing program, it's clear that without a valid system for measuring meaningful student performance, the goal of implementing appropriate accountability within the educational arena can easily be compromised.

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## *Historical Perspective*

In the late 1980s, Career and Technical Education began the process of implementing competency-based testing with the introduction of the CTE Skill Certificate Program.

Since that time, the Utah State Legislature has moved to prompt further development of the assessment system by determining that up to 20 percent of CTE funding would be allocated based on student performance. Competency-based testing subsequently grew to become an integral part of the Career and Technical Education curriculum, program improvement, and accountability objectives.

Strategies for improving the ability of the USOE to appropriately measure student performance, increasing testing process efficiency, and protecting the integrity and reliability of systematic student assessment can be enhanced through the use of innovative technology. As a result, the CTE program successfully transitioned from an antiquated and less reliable paper-and-pencil assessment program to a proctored, online web-based testing platform in 2006.

## Skills Certificate Advisory Committee

In accordance with [R277-911-3](#) of the Utah Administrative Code, a program advisory committee has been set up to provide advice and assistance to the Skill Certificate Program. Membership is made up of CTE Directors and representatives from the regional consortium. The resulting Skills Certificate Committee endorsed the move to an online web-based testing platform consistent with the strategies to improve the ability of USOE to appropriately measure student performance.

The innovative conversion would not have been possible without the funding and continued support of the Utah State Legislature. Ongoing funding from the Legislature continues to greatly enhance the ability of CTE to maintain and administer a valid online assessment system, which has served as a model for many states across the nation.

### R277-911-3

- A. Program Planning: CTE programs are based on verified training needs of the area and provide students with the competencies necessary for occupational opportunities.
- B. Program Administration
- C. Learning Resources
- D. Student Services
- E. Instruction
- F. Equipment and Facilities
- G. Instructional Staff
- H. Equal Educational Opportunity
- I. CTE Advisory Council
  - a. Program Advisory Committee
- J. CTE Student Leadership Organization
- K. Program and Instruction Evaluation

***All of the Utah's  
41 school districts and 135  
high schools participate in the  
Skill Certificate Program.***

## Current Perspective Standards and Objectives

Utah's Skill Certificate Program provides students with an opportunity to receive instruction within each program area of study that is aligned with national standards and objectives set by the state of Utah, business, and industry. These standards and objectives add an element of educational and industry credibility to the CTE program. All assessments are based upon a fundamental core set of standards and objectives for each program area.

Following are the eight CTE programs/areas of study:

- Agricultural Education
- Business and Economic Education
- Family and Consumer Sciences Education
- Health Science Education
- Information Technology Education
- Marketing Education
- Skilled and Technical Sciences Education
- Technology and Engineering Education

## Assessments

The CTE Skill Certificate Program includes both an online Objective Assessment and an online Performance Assessment for each CTE program area.

The [Performance Assessment](#) is completed in class and evaluated by the CTE teacher. The [Objective Assessment](#) is completed online using a proctored, online web-based testing platform with each test item linked to a single standard and objective. Students must pass both assessments in order to qualify for a CTE Skill Certificate.



## ***Tangible Benefits of the Online Web-Based Testing Platform***

There are essentially two tangible benefits that both the Utah State Office of Education and CTE students participating in the Skill Certification Program have derived from the implementation of the online web-based testing platform. These important benefits include [Administrative Efficiency](#) for the Utah State Office of Education and school districts throughout Utah; and [Assessment Integrity](#), where students have been the direct beneficiary.

Although higher student test scores do not generally correlate with an introduction of online assessment platforms (Ricketts and Wilks, 2002), it is worth noting that there has been a slight increase in CTE student test scores for year-end testing in 2010, when 100 percent of CTE objective assessments were administered online.

Year	Tested	Scored 65-100%
2007 – 2008	187,122	132,263
2008 – 2009	200,546	141,016
4/26/10 – 6/11/10	101,823	73,868
2010 – 2011	223,026	159,331

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### ***Administrative Efficiency***

The new online system has significantly reduced the overall labor involved in the creation, management, and improvement of CTE test administration. The most important time-saving measure relates to the administrative side of testing.

Before tests were converted to the online system, over 180,000 tests each year had to be printed, sorted, packaged, and shipped (each package contained test booklets, scan sheets, headers) to each participating school district in Utah.

District test coordinators were then required to distribute tests to teachers at schools, with teachers then having to manually administer exams to students, collect the tests, and return scan sheets, headers, and test booklets to the district test coordinator upon completion of the testing.

At that point, tests were then packaged and returned to USOE. Test books had to be accurately accounted for at the school and then accurately re-accounted for when they arrived back at the USOE.

Upon arrival, state staff members were required to hand-scan and correct over 180,000 tests, then manually enter all test scores into a central database for reporting.

The USOE would then manually print certificates for passing students and sort, package, and ship certificates to schools, where test coordinators would distribute thousands of skill certificates to teachers and subsequently to students.

This labor-intensive system has now been virtually eliminated with the introduction of the online web-based testing platform, thereby adding to the administrative efficiency of test administration, delivery, and management.

Precise financial figures quantifying financial savings have not been calculated, but significant shipping costs have been saved and important staff resources freed up and redirected to other educational areas needing vital administrative support as a result of the technological enhancement with online test delivery.

### **Certificates Awarded**

In 2010-2011, over 95,000 skill certificates were awarded to students. Student performance must be demonstrated in class as part of the skill certificate process.

***Students who successfully complete a specific skill certificate test, demonstrating substantial skill at 80 percent on ALL performance objectives and 80 percent on the written test, are issued a CTE Skill Certificate.***

**To date**, over 130 tests have been converted from paper-based assessments to an online delivery platform. More than 400,000 exams have subsequently been delivered using a web-based testing process.

### **Growth of Online Delivery**

2006-07 = 23% online  
2007-08 = 70% online  
2008-09 = 98% online  
2009-11 = 100% online

## Funding: Total Appropriation and Funds

State legislative appropriation was reduced from \$348,000.00 for FY 09-10 to \$341,000 for FY 10-11. Funds were used to support the CTE Skill Certificate Program and its associated online assessment platform. Precision Exams has served under contract as the program's online test development and administration vendor.

The following represents income from both the legislative appropriation and school district contributions:

<b>Income:</b>	
State Legislative Appropriation	\$341,000
2009-10 District Participation/Assessment	<u>\$90,000</u>
<b>TOTAL</b>	<b>\$431,000</b>



## Assessment Integrity

The pervasive problem of test-score inflation (i.e., score gains that overstate the underlying gains in genuine learning) can occur when teachers and students become increasingly familiar with the content and format of state tests (National Academy of Education, 2009).

With this in mind, test integrity as it relates to test-score inflation has been significantly improved by the introduction of the CTE online delivery platform. The antiquated paper-based system perpetuated the practice of “teaching to the test,” since copies of exams were so ubiquitously available. Rather than measuring actual knowledge and skills, this practice can curb learning when teachers limit instruction within the curriculum to narrow topics—a practice that creates serious test integrity problems and test-teaching mismatches (Burley, 2002). When the curriculum is narrowed in such a fashion, students obviously lose out on the broad skills required by a comprehensive CTE program.

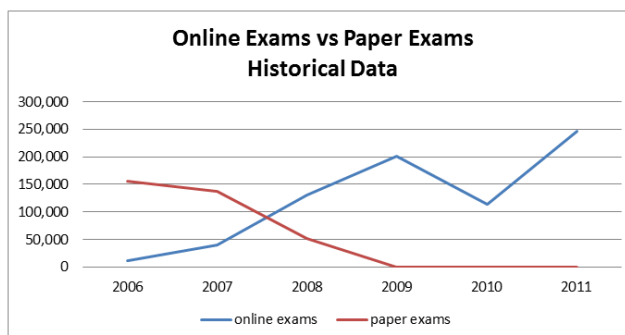
Another problem with the paper-based system was that it created many opportunities for exams to get lost, dropped, copied, and even stolen. This produced a situation where the integrity of exams might have eventually been compromised.

An additional problem involving test integrity under the old system was the inability of CTE professionals to routinely examine and revise tests. Individual exam questions were rarely systematically revised or rewritten because of the comprehensive nature of such a task, with most available time spent on the logistical demands of test distribution and administration. Consequently, existing assessments had a shelf life of one to two years.

Those tests that were eventually revised required updating and reprinting of test booklets, each costing up to \$1.00 to reprint. Even a simple modification to an existing exam required reprinting of ALL hard copy assessment materials.

The paper-based system also limited the ability of CTE personnel to access and produce appropriate data for psychometric item analysis. The CTE staff was simply unavailable to provide such assistance, given the logistical demands of administering a paper-based delivery system.

The new electronic system, the accompanying electronic item information, and the associated Authoring Tool has allowed for a more streamlined opportunity to access data, analyze test records, and use the information to subsequently revise exams. Psychometric test data is now easily collected and made available for proper item analysis, a critical component necessary for improving the reliability and validity of CTE exams.



## ***Future Perspective***

The benefits to education alone from having sensible accountability systems that effectively measure student outcomes are obvious. However, the reward for raising student performance is but a small fraction of the potential labor market value to the economy (Kane and Staiger, 2002).

The Institute for Strategy and Competitiveness at Harvard Business School reports that having a well qualified workforce is certainly a prerequisite for a healthy economy and allows a nation to maintain global competitiveness (Porter, 2002).

The existence of a valid educational assessment system that measures student outcomes and skill level is only one component within the accountability process for Career and Technical Education. The question remains: How do Utah employers become aware of the Skill Certificate Program?

An emphasis of the CTE Skill Certificate Program will be to market the existence of skill certificates to Utah employers. Employers must be made aware that CTE students are available who have a document validating skill attainment, and that they can have a relative degree of confidence that CTE students who have earned a skill certificate do indeed possess the requisite skills that can add labor market value to their business.

Another crucial element of the program will be to focus on leveraging the assessment system to engage in important psychometric activity in order to expand and revise exams, improve the reliability and validity of CTE exams, and augment the integrity of the assessment system.

***“The global economy places a premium on skill acquisition and technical skill assessment. Aligned with industry recognized standards, the Skill Certificate Program provides an important mechanism to evaluate the effectiveness of Career and Technical Education programs and helps ensure that Utah students are college- and career-ready.” —Mary Shumway, State Director, Career, Technical, and Adult Education***



Utah State Office of Education  
250 East 500 South P.O. Box 144200 Salt Lake City, Utah 84114-4200  
Larry K. Shumway, Ed.D., State Superintendent of Public Instruction  
Mary Shumway, State Director of Career, Technical, and Adult Education